NOVEMBER/DECEMBER 2024

23UEL31 — SEMICONDUCTOR DEVICE AND IC FABRICATION TECHNOLOGY

Time : Three hours Maximum : 75 marks

SHANMUGA INDUSTRIES ARTS & SCIENCE COLLEGE LIBRARY

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write any two advantages of UJT.

2. State any two applications of SCR.

3. Define MIM diode.

4. What is LDR?

5. How to prepare monolithic IC?

6. Define VLSI.

7. Draw the circuit diagram of ideal operation amplifier.

8. Define CMRR.

9. Draw the circuit diagram of adder circuit.

10. What is sample and holder circuit?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss the construction and working of SCR.

Or

(b) Explain the characteristics of TRIAC.

12. (a) Describe the working principle of MIM diode.

Or

(b) Draw the circuit diagram of semiconductor laser diode and explain its working.

13. (a) Discuss the monolithic integrated circuit technology.

Or

(b) Write a short note on the LSI.

14. (a) Explain about the BJT differential amplifier.

Or

(b) Write short note on the following :

(i) Differential gain

(ii) Slew rate.

LIBRARY

15. (a) Draw the circuit of integrator and differentiator and explain its working.

Or

(b) Discuss the triangular waveform generator.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the construction and working of UJT.

17. Draw the circuit diagram of solar cell and explain its working principle.

18. Describe the construction and operation of MOSFET in enhancement mode. Draw its characteristics and equivalent circuit.

19. Explain the internal circuit diagram of IC741.

20. Draw the circuit diagram of sine waveform generator and explain its working.

———————